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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/662,540	09/15/2003	Wolfgang Roethig	NEC0250US	2264
33031	7590	02/16/2005	EXAMINER	
CAMPBELL STEPHENSON ASCOLESE, LLP			DINH, PAUL	
4807 SPICEWOOD SPRINGS RD.				
BLDG. 4, SUITE 201			ART UNIT	PAPER NUMBER
AUSTIN, TX 78759			2825	

DATE MAILED: 02/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

CT

Office Action Summary	Application No. 10/662,540	Applicant(s) ROETHIG, WOLFGANG	
	Examiner Paul Dinh	Art Unit 2825	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 January 2005.
 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 19-34 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1-10 and 19-34 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☒ The drawing(s) filed on 15 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/15/03</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This is a response to the election without traverse filed on 1/11/05.

The examiner acknowledges:

The cancellation of claims 11-18 and 35-36; and

The election of claims 1-10 and 19-34.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) The invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1, 3, 5-7, 9-10, 19, 21, 23-24, 26-27, 29, 31-32, 34 are rejected under 35 U.S.C. 102(e) as being anticipated by Li et al (USP 6721929) who discloses a medium/method/system comprising:

(Claims 1, 5, 19, 23, 27, 31)

accessing data representing an interconnect model, wherein the interconnect model includes a driving point node (abstract, fig 1, 4, 7-11), and wherein the interconnect model is not a lumped capacitance model (the interconnect model is a pi model (fig 10-11));

calculating an effective capacitance of the interconnect model to be inversely proportional to a voltage at the driving point node of the interconnect model (col 7); and storing a value representing the effective capacitance (fig 12).

(Claims 3, 21, 29) wherein said accessing further comprises accessing data representing a driver model; and said calculating comprises calculating the effective capacitance as a function of a resistance included in the driver model (fig 1, 7-11)

(Claim 6) calculating a plurality of time constants from a plurality of capacitances and a resistance included in the pi model and from a resistance included in a driver model of a driver coupled to

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an interconnect modeled by the interconnect model; and using the plurality of time constants to perform said calculating the effective capacitance (RC time constants and pi model in fig 1, 7-11).

(Claims 7, 24, 32) the interconnect model includes one or more inductances (col 8 line 17)

(Claims 9, 26, 34) wherein said storing comprises storing the effective capacitance value in a lookup table (col 1).

(Claim 10) repeating said calculating and said storing for each of a plurality of different values of the one or more capacitances in the interconnect model (fig 7, 12).

2. Claims 1-8, 10, 19-25, 27-33 are rejected under 35 U.S.C. 102(e) as being anticipated by Puri et al (USP 6601223) who discloses a medium/method/system comprising:

(Claims 1, 5, 19, 23, 27, 31)

accessing data representing an interconnect model, wherein the interconnect model includes a driving point node (fig 1-2, 5), and wherein the interconnect model is not a lumped capacitance model (the interconnect model is a pi model (fig 1-2, 5));

calculating an effective capacitance of the interconnect model to be inversely proportional to a voltage at the driving point node of the interconnect model (fig 1-3, 5-6, col 5-11); and storing a value representing the effective capacitance (fig 1-3, 5-6, col 5-11).

(Claims 2, 20, 28) wherein said calculating calculates the effective capacitance to be directly proportional to a sum of one or more products, wherein each of the one or more products equals a product of a respective one of one or more capacitances included in the interconnect model and a voltage across the respective one of the one or more capacitances (col 11).

(Claims 3, 21, 29) wherein said accessing further comprises accessing data representing a driver model; and said calculating comprises calculating the effective capacitance as a function of a resistance included in the driver model (fig 1-6)

(Claims 4, 22, 30) wherein said calculating is performed without using numerical techniques (col 5, 11).

(Claim 6) calculating a plurality of time constants from a plurality of capacitances and a resistance included in the pi model and from a resistance included in a driver model of a driver coupled to an interconnect modeled by the interconnect model; and using the plurality of time constants to perform said calculating the effective capacitance (RC time constants and pi model in fig 1-6).

(Claims 7, 24, 32) the interconnect model includes one or more inductances (col 2 line 4)

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(Claims 8, 25, 33) said calculating the value of the effective capacitance is performed according to a closed form algorithm (col 5 line 60).

(Claim 10) repeating said calculating and said storing for each of a plurality of different values of the one or more capacitances in the interconnect model (fig 5-6).

3. Claims 1, 3-10, 19, 21-27, 29-34 are rejected under 35 U.S.C. 102(b) as being anticipated by Muddu (USP 6314546) who discloses a medium/method/system comprising:

(Claims 1, 5, 19, 23, 27, 31)

accessing data representing an interconnect model, wherein the interconnect model includes a driving point node, and wherein the interconnect model is not a lumped capacitance model (the interconnect model is a pi model (fig 4-6, 8));

calculating an effective capacitance of the interconnect model to be inversely proportional to a voltage at the driving point node of the interconnect model (fig 2-8, col 4); and storing a value representing the effective capacitance (store in computer/memory (col 2-4)).

(Claims 3, 21, 29) wherein said accessing further comprises accessing data representing a driver model; and said calculating comprises calculating the effective capacitance as a function of a resistance included in the driver model (fig 3-6, 8)

(Claims 4, 22, 30) wherein said calculating is performed without using numerical techniques (No numerical techniques mentioned in this prior art).

(Claim 6) calculating a plurality of time constants from a plurality of capacitances and a resistance included in the pi model and from a resistance included in a driver model of a driver coupled to an interconnect modeled by the interconnect model; and using the plurality of time constants to perform said calculating the effective capacitance (RC time constants and pi model in fig 3-8).

(Claims 7, 24, 32) the interconnect model includes one or more inductances (fig 6)

(Claims 8, 25, 33) said calculating the value of the effective capacitance is performed according to a closed form algorithm (col 1 line 51, col 7 line 60, page 2, right column.).

(Claims 9, 26, 34) wherein said storing comprises storing the effective capacitance value in a lookup table (col 6-7, 10).

(Claim 10) repeating said calculating and said storing for each of a plurality of different values of the one or more capacitances in the interconnect model (by hardware/software in this prior art).

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Dinh whose telephone number is 571-272-1890. The examiner can normally be reached on Monday to Friday from 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew S. Smith can be reached on 571-272-1907. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Paul Dinh

Patent Examiner

Paul Dinh
2/10/05